

A Satellite View for INTEx

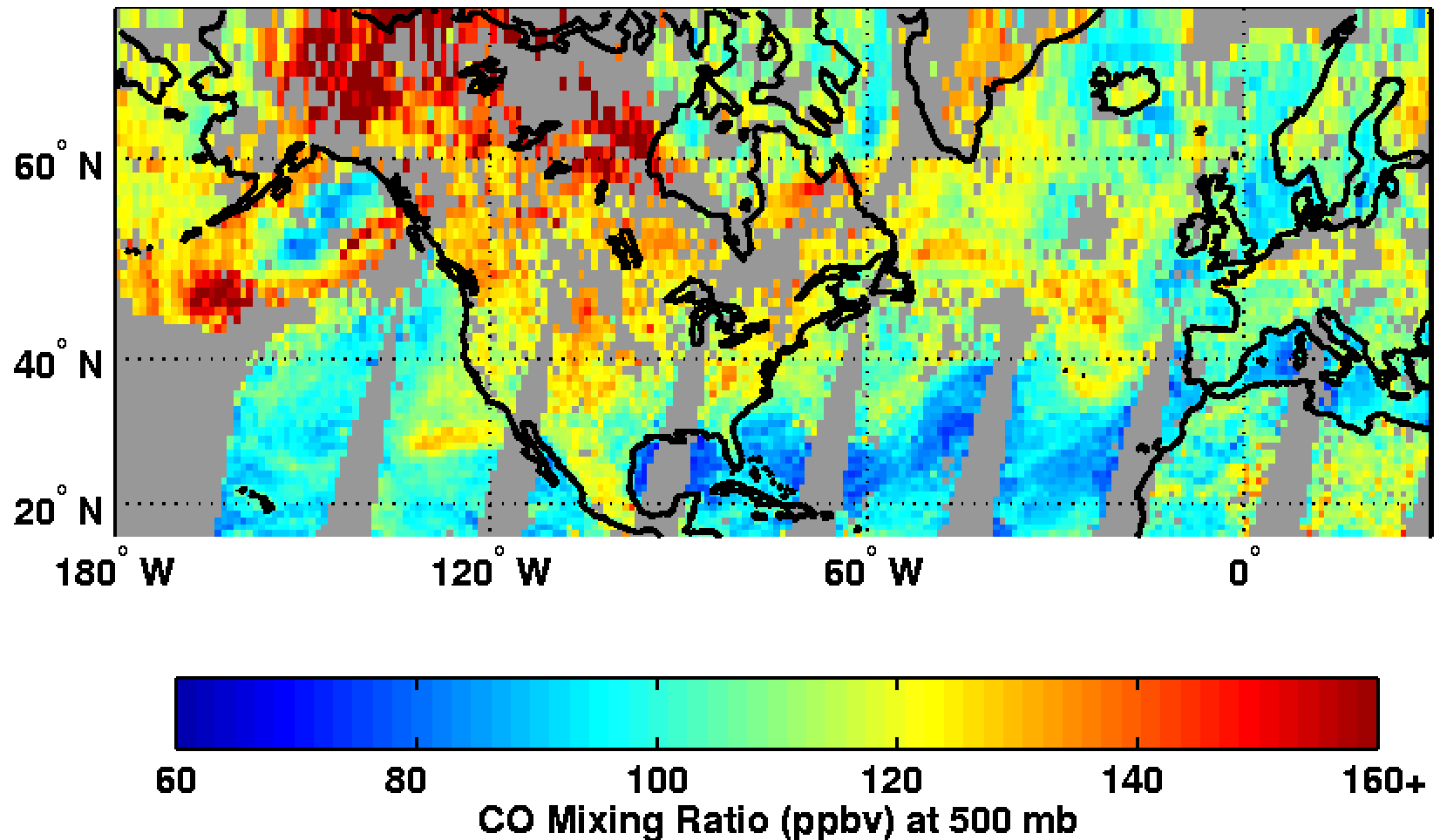
- **ENVISAT *Sciamachy*:** Andreas Heckel (U. Bremen)
- **Aqua *AIRS*:** Wallace McMillan (UMBC) w/NOAA-NESDIS
- **Terra *MOPITT*:** W. McMillan for L. Emmons (NCAR)
- **Terra *MODIS*:** Allen Chu (UMBC/JCET)
- **GOES *GASP*:** A. Chu for
S. Kondragunta and A. Prados (NOAA/NESDIS)

Satellite Goals for INTEx

- **Forecasting and Flight-planning guidance**
 - Online data and maps (see INTEx forecast/satellite webpage)
 - Scientists in the field
- **Validation of satellite retrievals**
 - Field comparison of satellite and *in situ*
 - Detailed post-experiment analysis
- **Post-experiment analyses**
 - Satellites help put aircraft *in situ* in a larger context
 - *In situ* tells satellites what **REALLY** was were
 - Model assimilation of satellite retrievals
 - Air Quality and long-range transport studies
 - Emissions and process studies

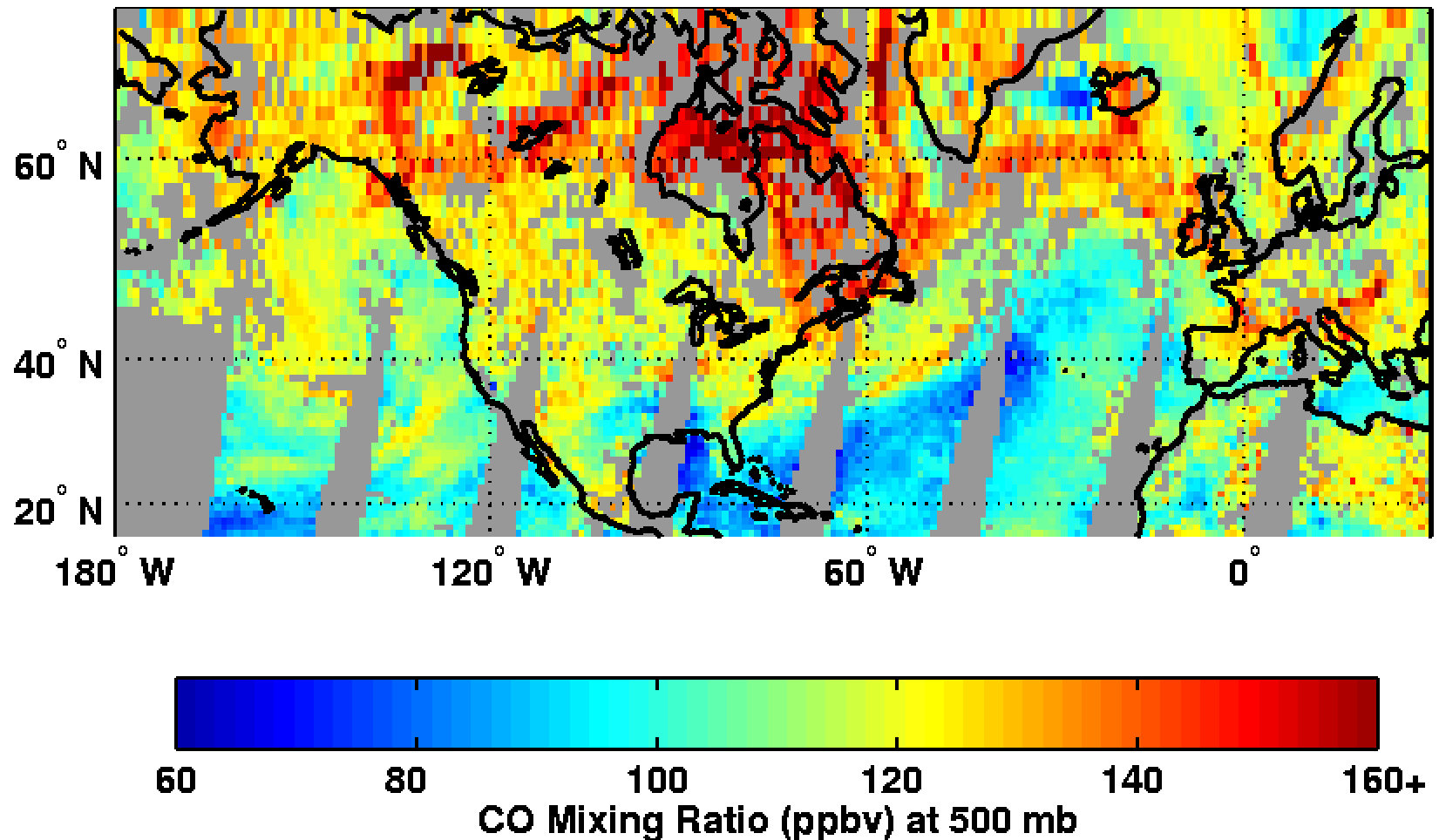
AIRS INTEX CO Movie 7/5-7/11

Local AM (descending) AIRS CO at 500 mb on 20040705



AIRS INTEX CO Movie 7/12-22

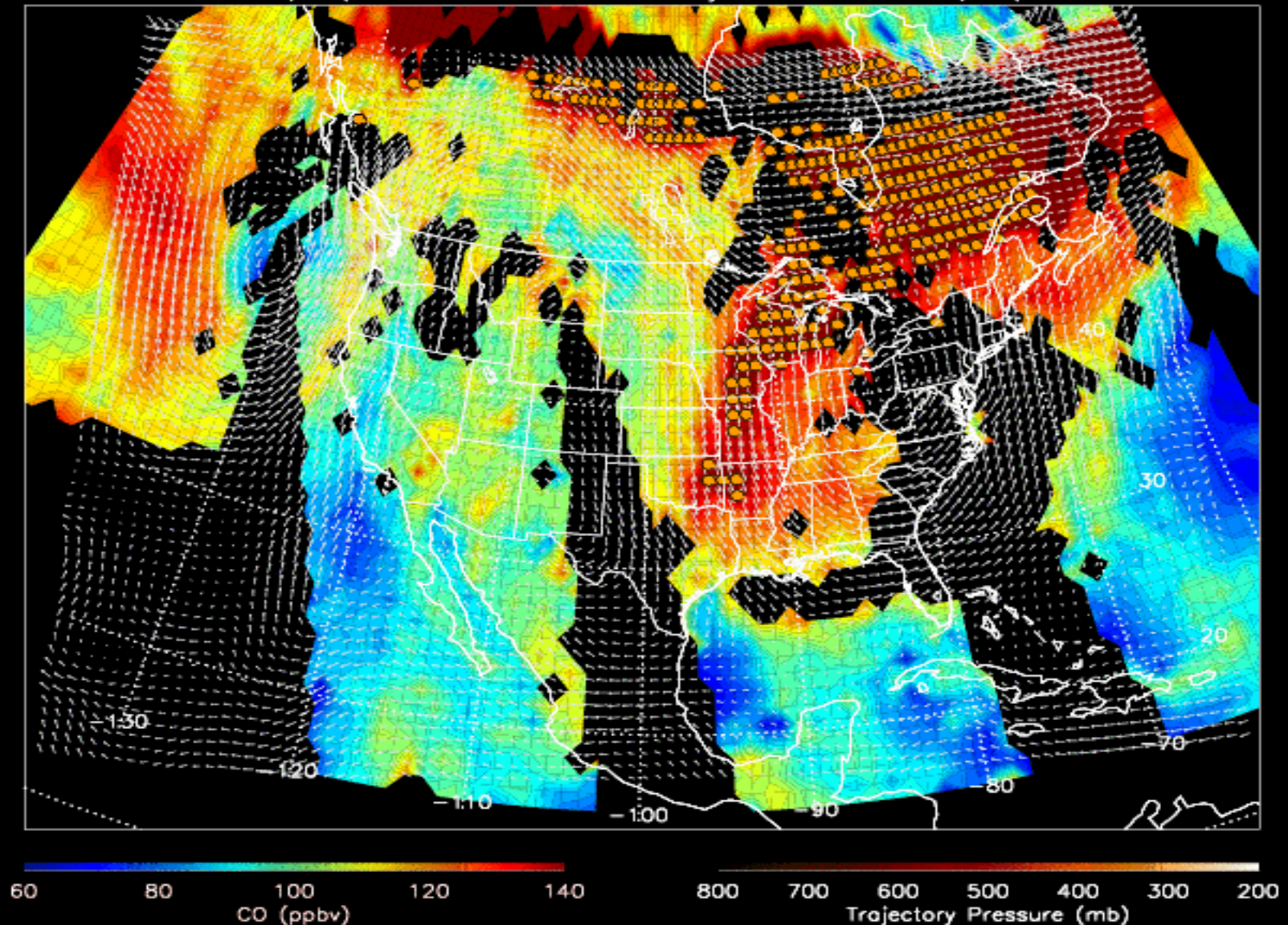
Local AM (descending) AIRS CO at 500 mb on 20040712



AIRS CO Trajectory Forecast

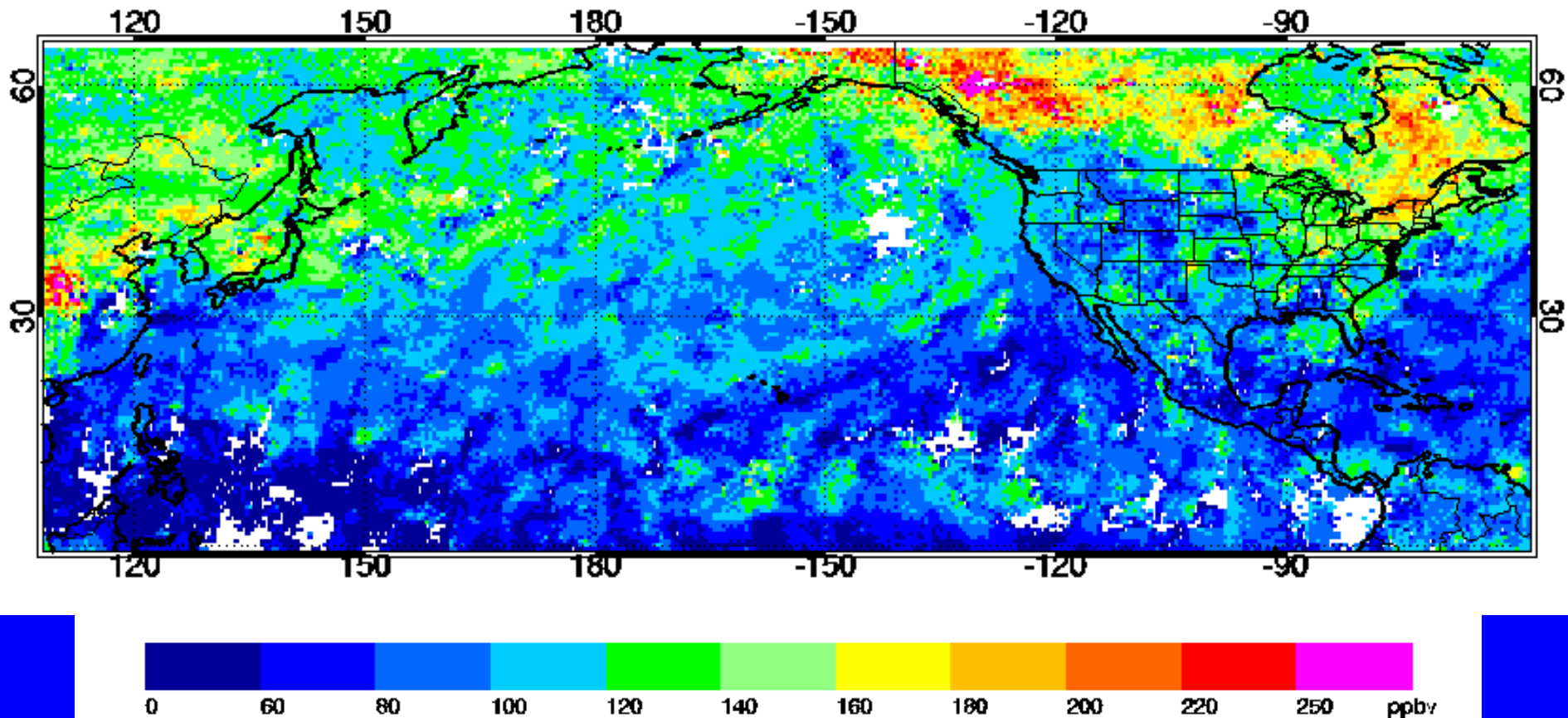
with Brad Pierce (NASA/LaRC)

AIRS 2004/07/18 500mb CO & CO Trajectories on 2004/07/18 19Z



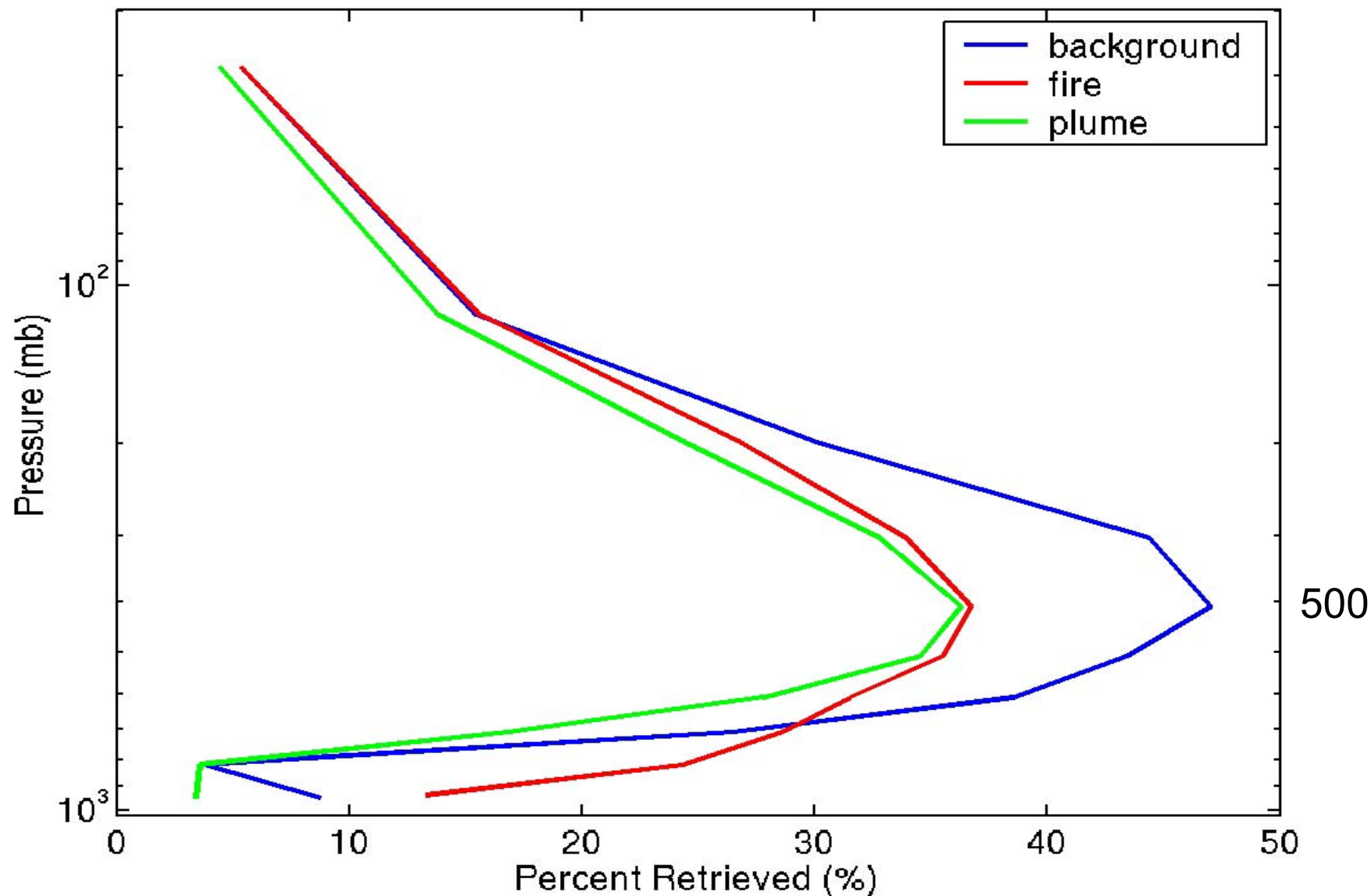
MOPITT CO - July 11-21 - 700 hPa

Highest CO is seen over the fires in Alaska and the Yukon, as well as Asia. Both fires and industrial pollution contribute to high CO over eastern US. Asian pollution being transported across Pacific.



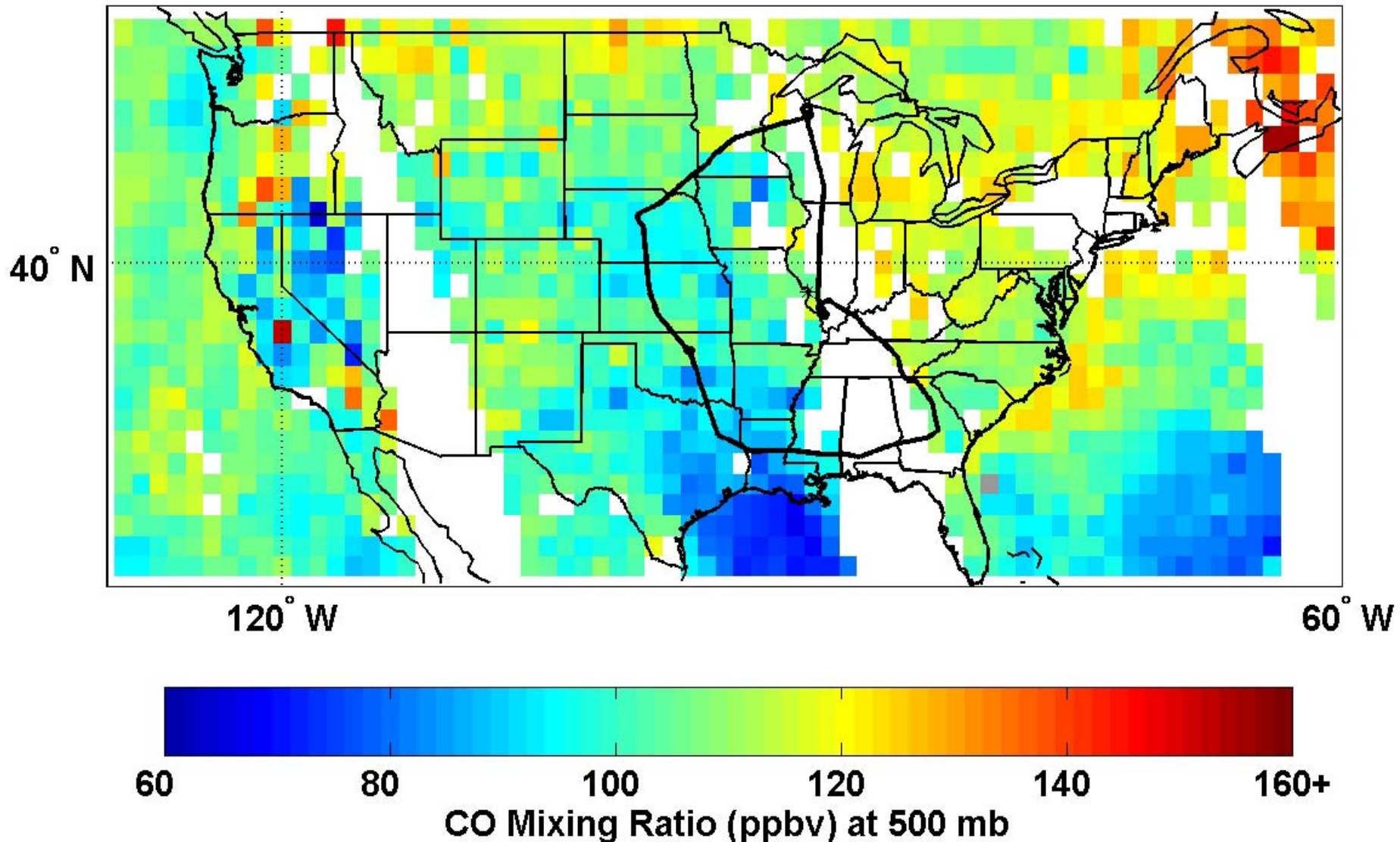
AIRS CO Kernel Functions

mcmillan figure 3

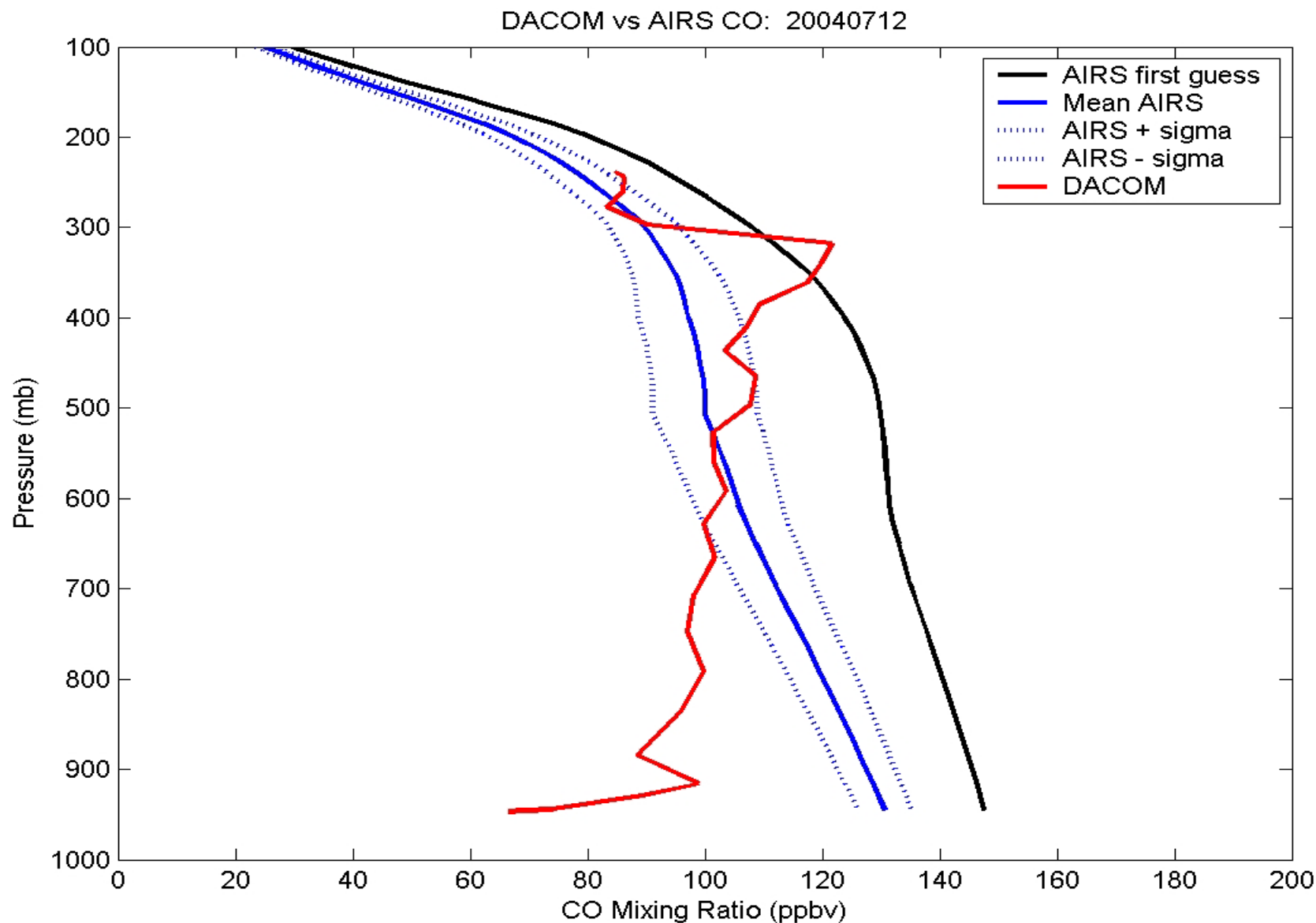


First INTEx AIRS Validation

Local PM AIRS CO at 500 mb on 20040712

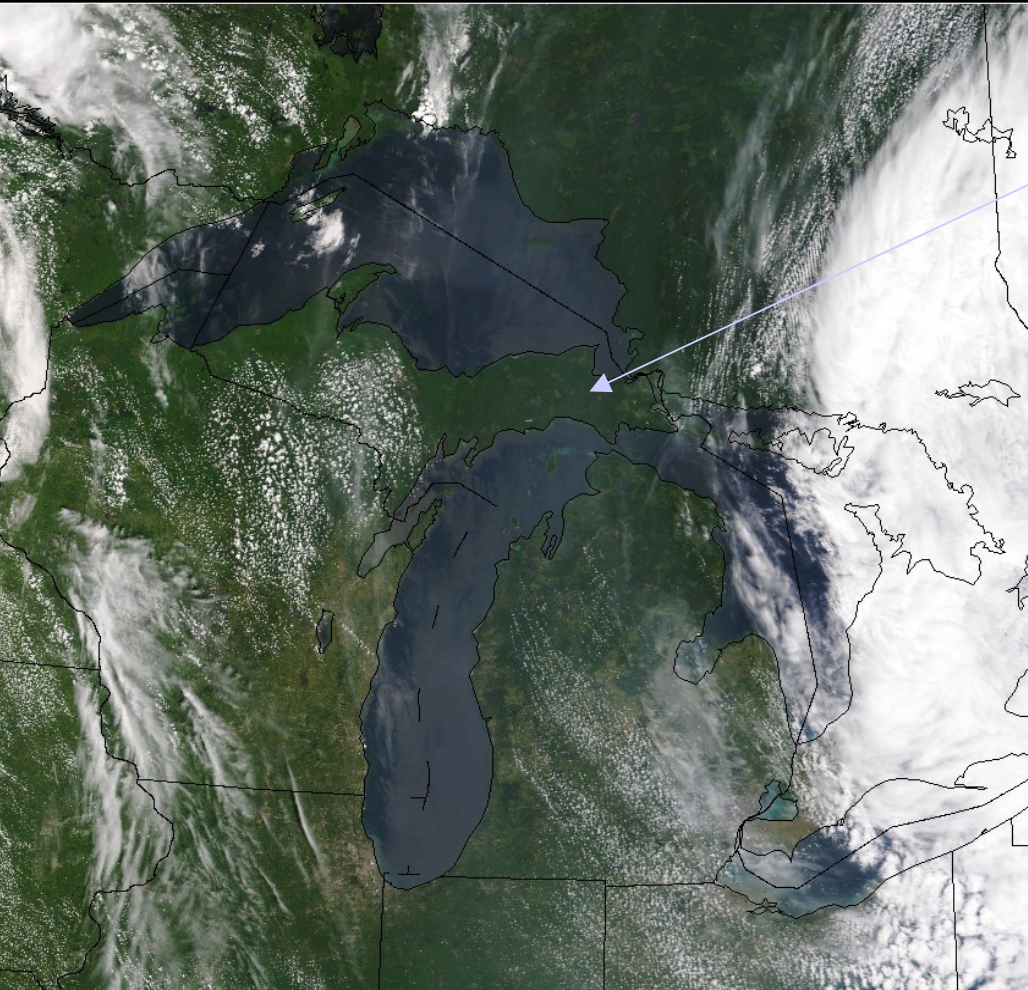


First INTEx AIRS Validation



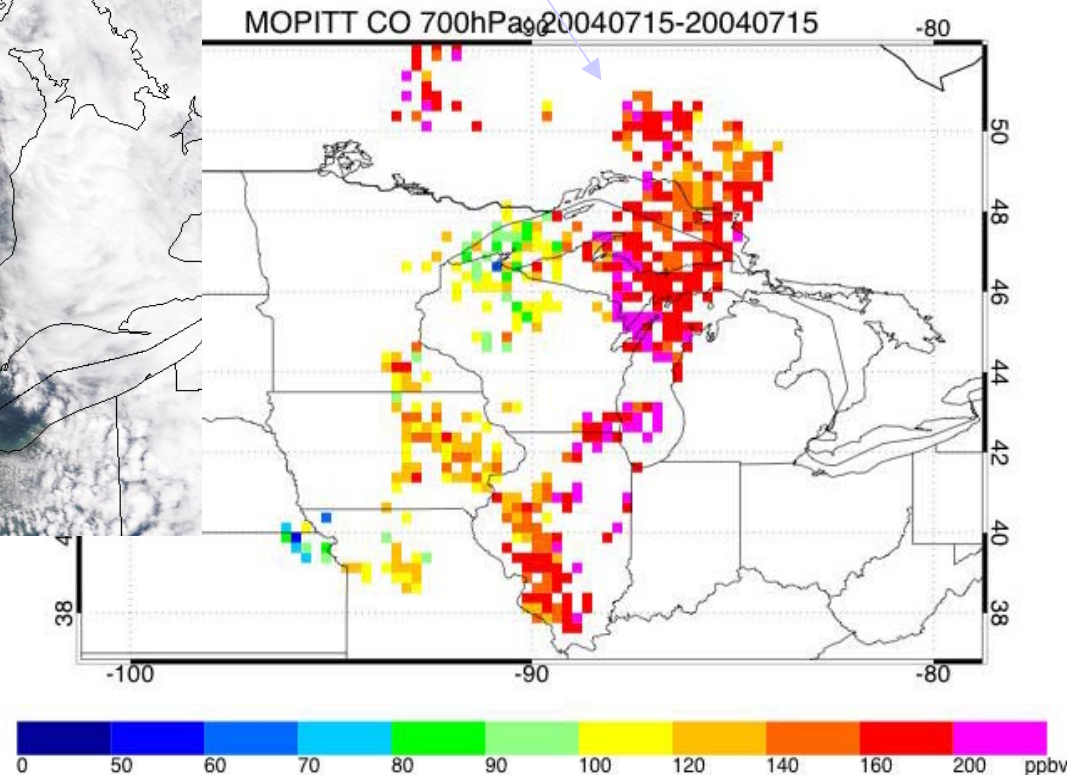
MODIS and MOPITT CO - July 15

TERRA MODIS 2004-07-15 1658-1710 UTC Bands 010403: Great Lakes



Smoke plume

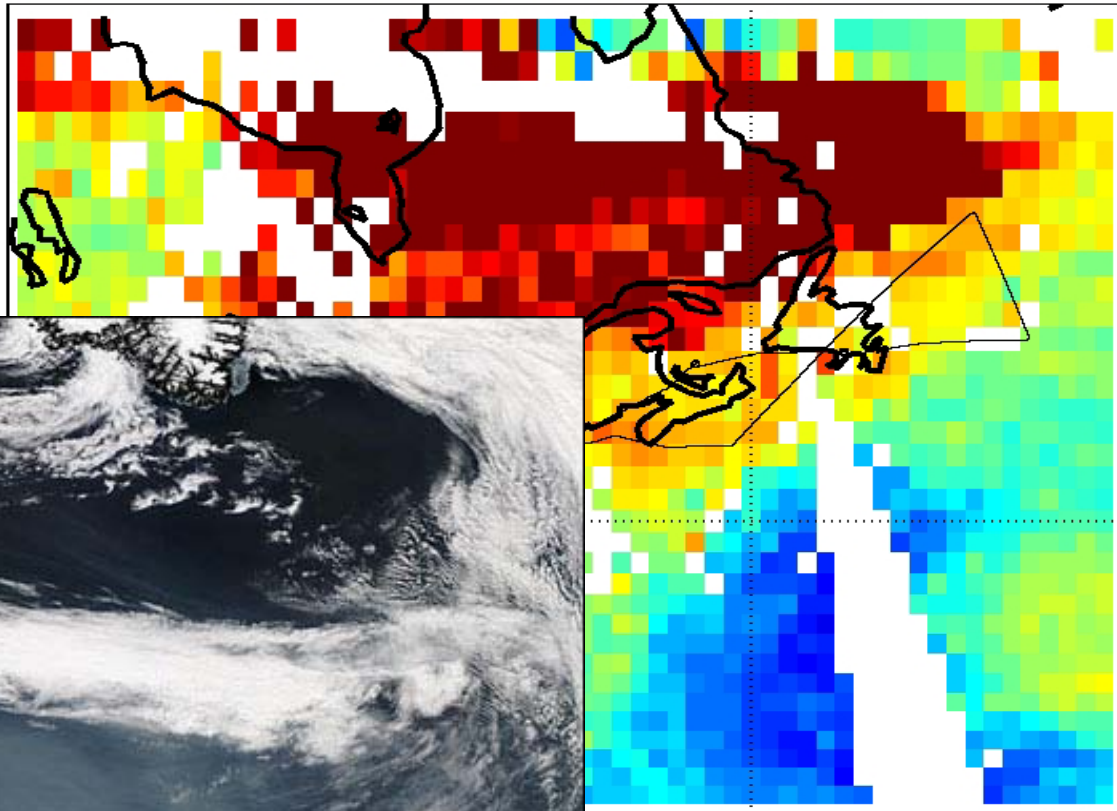
MOPITT CO 700hPa 20040715-20040715



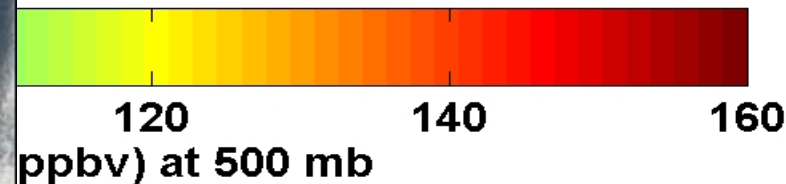
AIRS CO and MODIS Smoke

Local PM (ascending) AIRS CO at 500 mb on 20040718

60° N

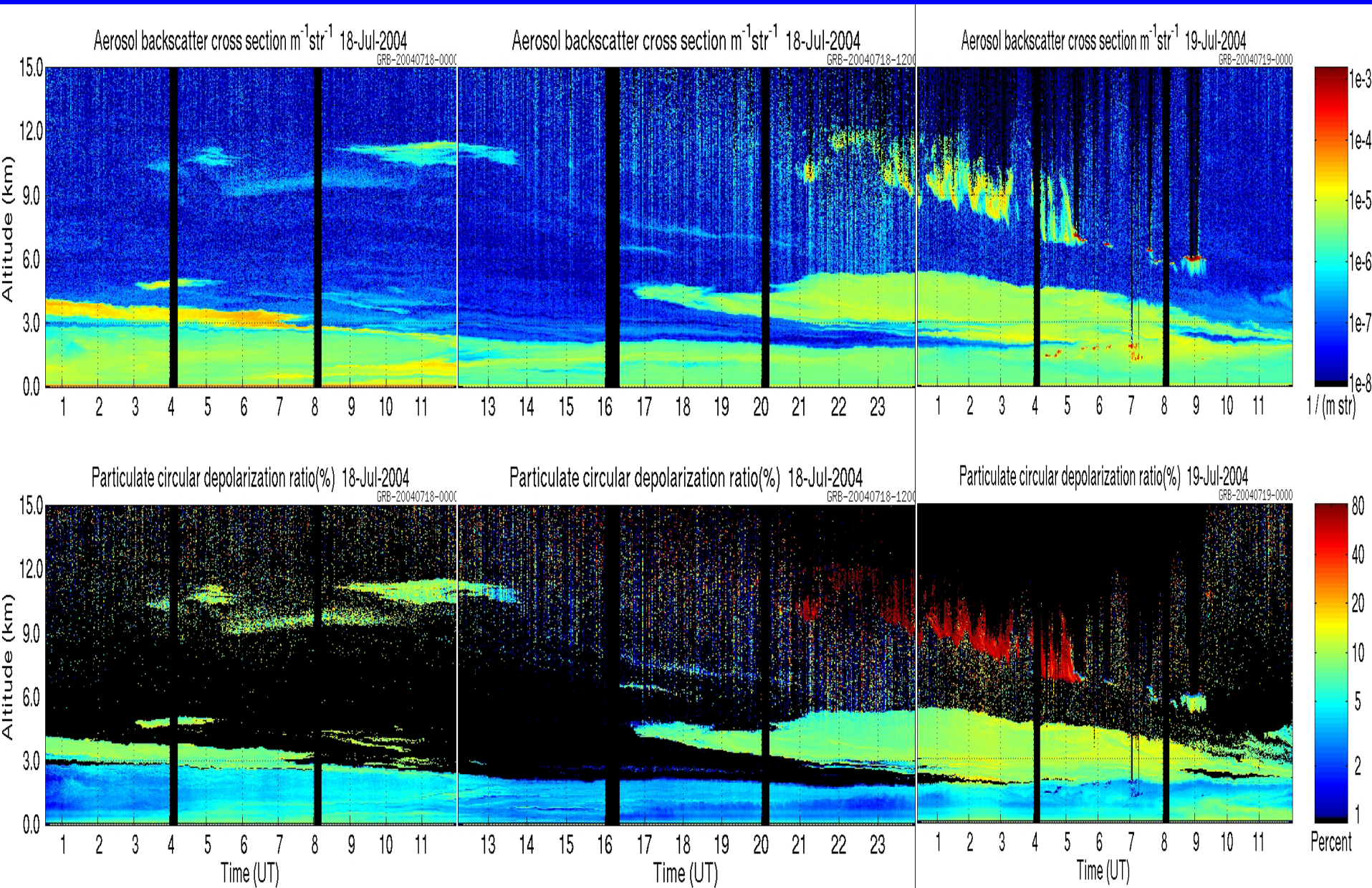


60° W



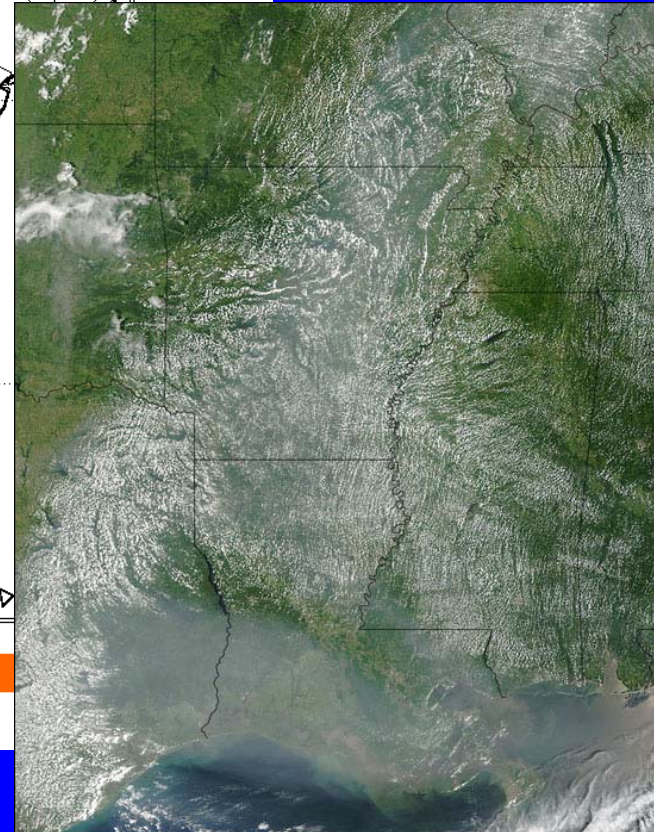
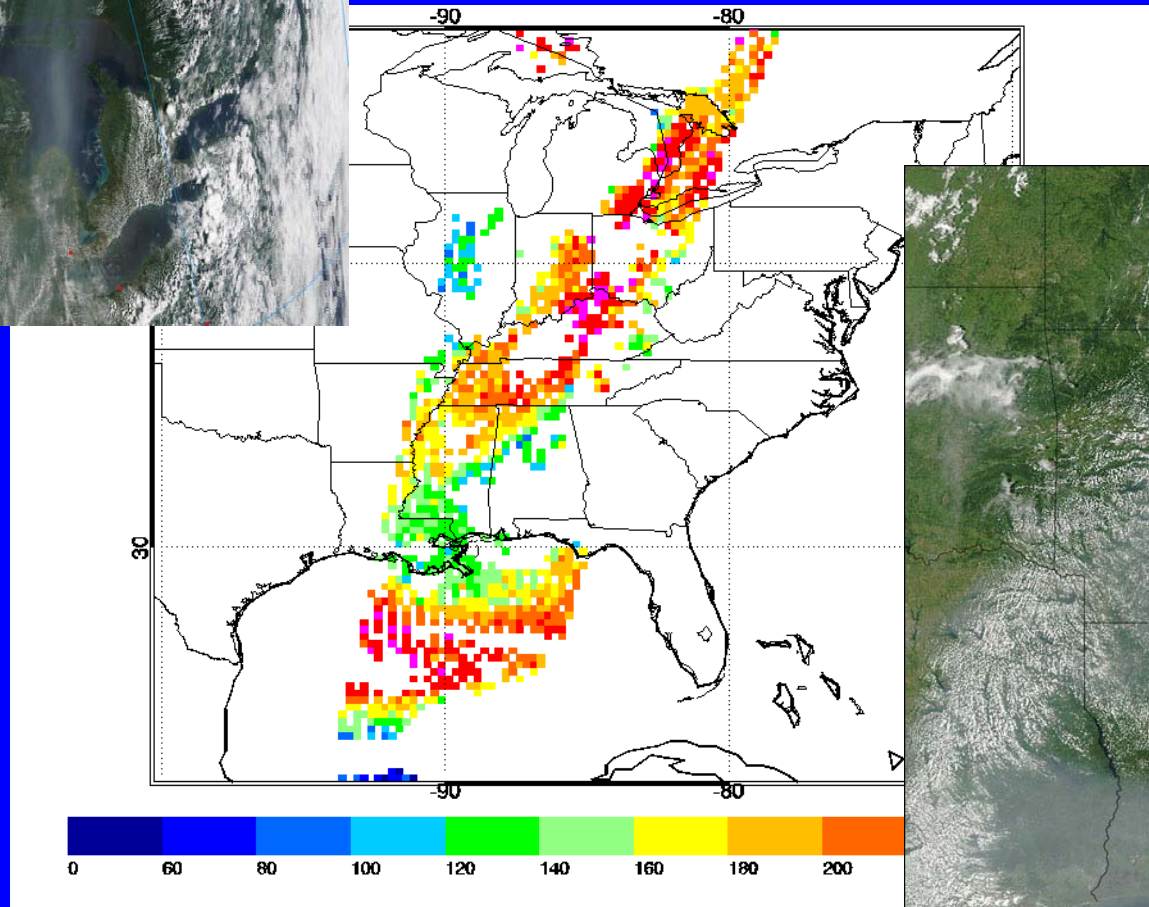
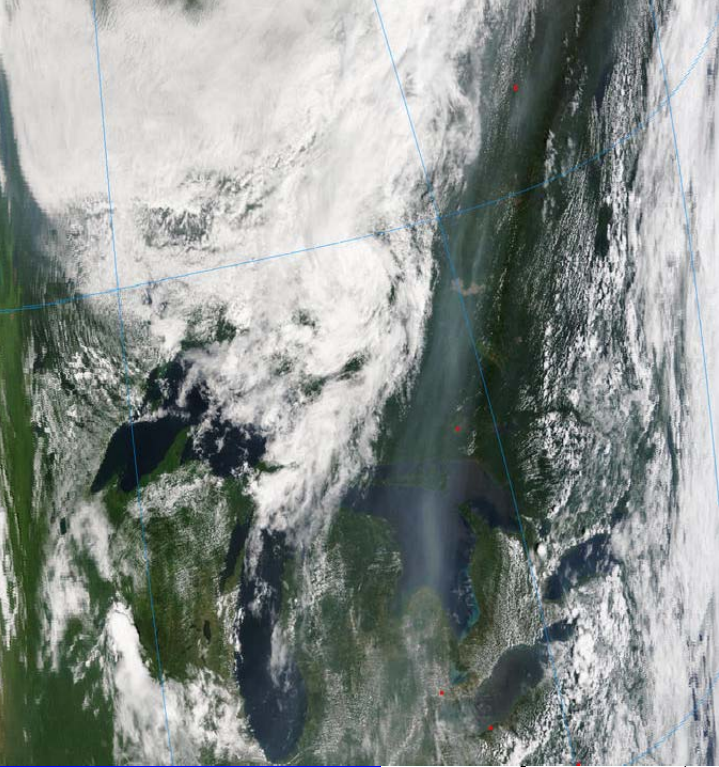
7/19 MODIS Terra

7/18-19 Wisconsin Lidar, Eloranta - REALM

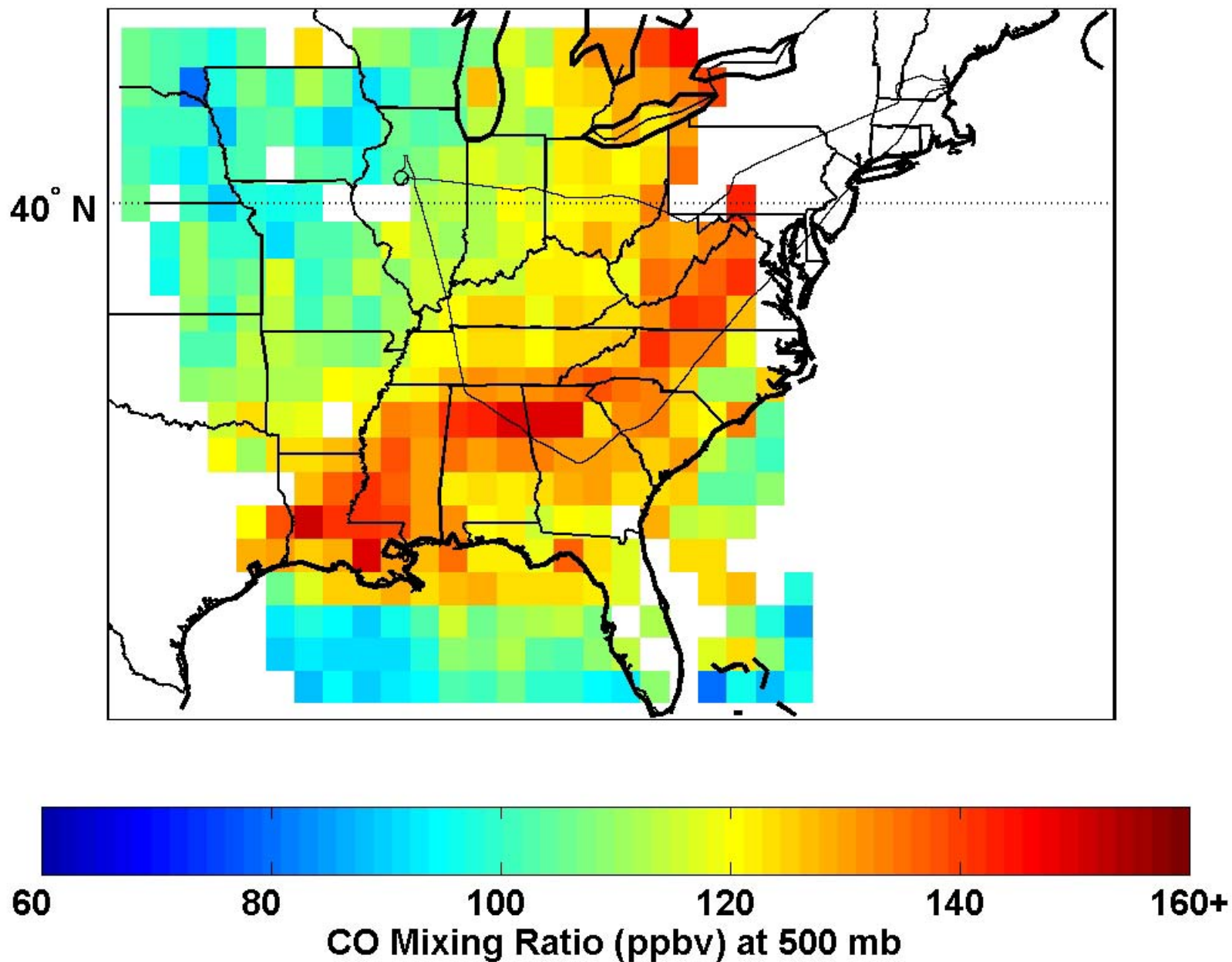


Terra/MODIS and MOPITT CO at 700 hPa - July 19

Smoke and CO over Lake Huron from fires.
Low CO and aerosols over Louisiana.



Local PM AIRS CO at 500 mb on 20040720



Alaskan smoke over Alabama

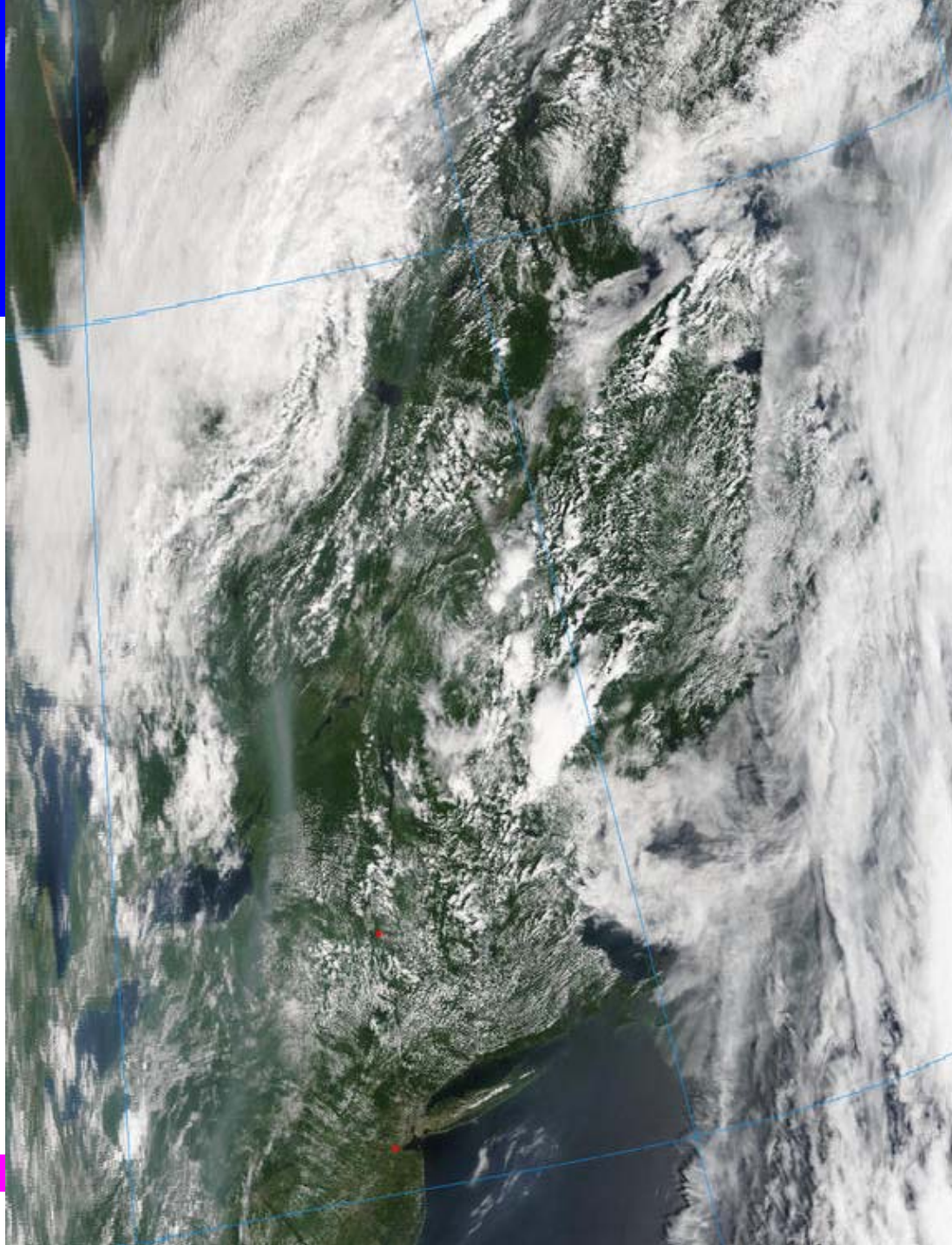
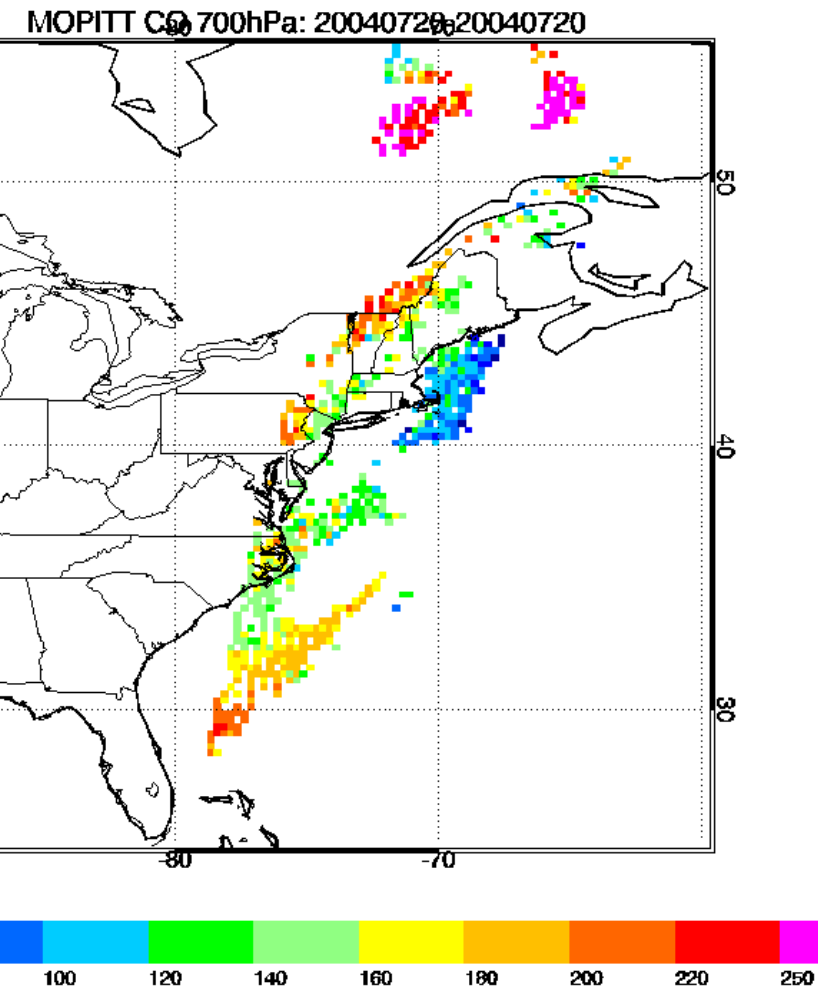


Midwest pollution over Alabama

Photo by Henry Fuelberg

Terra/MODIS - July 20

Smoke plume
across NY and PA



Alaskan smoke over New York



Photo by Henry Fuelberg

